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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/642,533	08/18/2000	Jiebo Luo	80632DMW	7789

1333 7590 09/11/2003

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EXAMINER

WU, JINGGE

ART UNIT PAPER NUMBER

2623

DATE MAILED: 09/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/642,533

Applicant(s)

LUO ET AL.

Examiner

Jingge Wu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-90 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-12, 15, 19, 22, 27, 29, 32, 36, 39, 44, 46-57, 60, 64, 67, 74, 77, 81, 84 and 89 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 and 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Continuation of Disposition of Claims: Claims withdrawn from consideration are 13,14,16-18,20,21,23-26,28,30,31,33-35,37,38,40-43,45,48-59,61-63,65,66,68-73,75,76,78-80,82,83 and 85-89.

DETAILED ACTION

Applicant's election with traverse of species I in paper No. 7 is acknowledged.

Regarding to Applicant's argument in paper No. 7, Examiner believed that the species I is directed to a process of detecting a main object by generating a main subject belief map and modifying a pre-selected property of pixels according to the map, which only is relied on belief values or probabilities. The species II is directed to an alternative process of detecting a main object by generating a main subject belief map, which computes threshold and generates and clears up a binary map. The species III is directed to an alternative process of detecting a main object by generating a main subject belief map, which computes main subject threshold and back ground threshold and generates a map indicating main subject, second subject and background. The differences between the species I, II and III are patentably distinct as expressly indicating in the figs. 2-4 and has also been described by the Applicant in the specification as alternative embodiments (see page 5 lines 11-16, and page 14-20, note that species I is a method/process only relied on probabilities to detect a main object, species II is an alternative method/process using both a belief map and a binary map to detect a main object, and species III is an alternative method/process using both a belief map and an object map to detect objects). Accordingly, claims 1-12, 15, 19, 22, 27, 29, 32, 26, 29, 44, 46-57, 60, 64, 67, 74, 77, 81, 84, and 89 are now presented for prosecution. Claims 13-14, 16-18, 20-21, 23-26, 28, 30-31, 33-35, 37-38, 40-43, 45, 58-

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59, 61-63, 65-66, 68-73, 75-76, 78-80, 82-83, 85-88, and 90 are withdrawn from consideration. Applicant is reminded to cancel the withdrawn claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-12, 29, 32, 36, 39, 44, 46-57, 60, 64, 67, 74, 77, 81, 84, and 89 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6282317 to Luo et al.

As to claim 1, Luo discloses a system for modifying an image having pixels, comprising:

means for automatically identifying a main subject of the image (col. 6 line 60-col. 8 line 23, note that segmentation is to identify a main subject of the image and the segmentation is automatically conducted); and

means for altering pixel values to emphasized the main subject (fig. 8, col. 6 line 60-col. 9 line 31, col. 11-col. 12 note that the segmentation is inherently emphasizing the main subjects from the background image and is necessary to altering pixel values of original image such as scene image).

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As to claims 2-3, Luo further discloses altering pixel values that are either a part of the subject (main subject itself) or not a part of the subject (background) (fig. 8, col. 6 line 60-col. 9 line 31, col. 11-col. 12 note that the segmentation is inherently emphasizing the main subjects from the background image and thus, is necessary to altering pixel values of subject and background, especially segmenting a border line between objects and background images).

As to claim 4, Luo further discloses the steps of:

means for segmenting the image into a plurality of regions based on uniform image characteristics (col. 7 lines 8-67);

means for calculating a level of saliency for the regions (col. 8 line 1-col. 10); and

means for assigning a believe value to the pixels corresponding the level of saliency (col. 10 lines 47-87, col. 15 lines 45-57).

As to claims 5-6, Luo further discloses pixle color and texture as image characteristics (col. 6 lines 51-58).

As to claims 7-10, Luo further discloses calculating level of saliency as a region feature, combination of region feature, structure region feature, and semantic region feature (col. 6 lines 51-58, col. 8-13, col. 16-17).

As to claim 11, Luo further discloses segmenting orders said believe values according to a probability that region is a main subject (col. 13, line 47-col. 15 line 57)

As to claim 12, Luo discloses a system of modifying an image having pixels, comprising:

means for automatically generating at least a first belief value associated with one of a plurality regions of the image, the belief values related to probability that the associated region is a main subject of the image (col. 14-16); and

means for altering pixel values in the regions in relation to the belief values (col. 15 line 27-57, col. 7 lines 8-47).

As to claims 15, 19, 22 and 27, Luo further discloses the steps of computing saturation, luminance (brightness), hue, and blur (contrast of texture) for each pixel and altering it according to associated belief values (col. 6 lines 51-57, col. 8 line 40-col. 9 line 31, col. 15-17).

As to claim 29, Luo discloses a system for modifying an image, comprising:

means for automatically generating a main subject belief map containing values indicating the location of a plurality regions in the image (col. 15 lines 27-57), said main subject belief map containing at least a first belief value associated with one of the plurality of regions, the belief values related to the probability that the associated region is a main subject of the image (col. 15-17).

As to claims 32, 36, 39 and 44, The discussion are addressed with regard to claims 15, 19, 22, and 27.

As to claims 46-56, claims 46-56 are the corresponding method claims to claims 1-11 respectively. The discussion are addressed with regard to claims 1-11.

As to claims 57, 60, 64, and 67, and 74, 77, 81, 84, and 89, The discussion are addressed with regard to claims 12, 15, 19, 22, 27, and 29.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 5710583 to Moghaddam et al., Us 6333993 to Sakamoto et al., US 6014461 to Hennessey et al., and US 6483940 to Wang disclose methods for detecting object using probability and knowledge-based method.

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Contact Information

Any inquiry concerning this communication or earlier communications should be directed to Jingge Wu whose telephone number is (703) 308-9588. He can normally be reached Monday through Thursday from 8:00 am to 5:30 pm. The examiner can be also reached on second alternate Fridays.

Any inquiry of a general nature or relating to the status of this application should be directed to TC customer service whose telephone number is (703) 306-0377.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Amelia Au, can be reached at (703) 308-6604.

The Working Group Fax number is (703) 872-9314.

Jingge Wu

Primary Patent Examiner

